FSG3224 Applied Computational Fluid Dynamics 6.0 credits

Tillämpade strömningsmekaniska beräkningar

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FSG3224 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

SG2212/SG3114 Computational Fluid Dynamics (7,5 ECTS) or similar knowledge in numerical methods for CFD.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

Knowledge required for performing a complete CFD analysis. In particular to identify and choose approximations and models, choose boundary conditions, design and dimension the

computational grid, identify and quantify sources of error, and take into account quality and reliability of the computational results.

Additionally, doctoral students will gain knowledge into defining and promoting a CFD project.

Course contents

Presentations of the different parts of the course in order to carry through a CFD analysis including lab time. Performance of a substantial project in a group of students which entails a complete CFD analysis, including the investigation of a specific problem. Information on the different commercial CFD software systems.

Disposition

Lectures 8x2h, lab 10h, project presentation 4h. In all 30h of scheduled time.

Course literature

Lecture notes.

Examination

- INL1 - Assignment, 1.0 credits, grading scale: P, F
- SEM1 - Seminars, 4.0 credits, grading scale: P, F
- PRO1 - Project work, 1.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

INL1 Assignment 1,0 hp (P, F)

PRO1 Project work 1,0 hp (P, F)

SEM1 Seminars 4,0 hp (P, F)

Additionally to SG2224, doctoral students taking SG3224 are required to define and write an additional CFD project description and to present that project for the SG2224-students. This implies that the doctoral students will take the SG2224 course the first year and formulate the additional CFD project descriiption for the next year SG2224 class. Supervision of the students doing their proposed project is not part of the course requirements.

Other requirements for final grade

Individual home assignent

Project report

Define and write a CFD-project description

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.